



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW1431GA-JM BYPASS RATIO: 11.9  
 UNIQUE ID NUMBER: 01P22PW174 PRESSURE RATIO ( $\pi_{00}$ ): 35.6  
 COMBUSTOR: TALON X, Block-C  
 ENGINE TYPE: TF RATED THRUST ( $F_{00}$ ) (kN): 140.4

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	0.5	29.0	30.6	16.4
AS % OF ORIGINAL LIMIT	2.3	24.6	27.5	76.1
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			34.3	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			39.1	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			43.6	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			49.8	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 - OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	0.950	0.02	0.22	22.60	14.9
CLIMB OUT	85	2.2	0.780	0.04	0.23	18.00	13.3
APPROACH	30	4.0	0.270	0.02	4.03	9.28	0.5
IDLE	7	26.0	0.090	0.30	25.22	5.14	1.0
LTO TOTAL FUEL (kg) or EMISSIONS (g)			348	50	3835	4078	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				9	9	9	9
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				0.4	26.8	28.4	14.9
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.9-103
TEMPERATURE (K)	266.2-298.7
ABS HUMIDITY (kg/kg)	0.00036-0.01437

### FUEL

SPEC	Jet A
H/C	1.86
AROM (%)	15.1-16.6

MANUFACTURER: Pratt & Whitney  
 TEST ORGANIZATION: Pratt & Whitney  
 TEST LOCATION: X7 Test Stand, East Hartford, CT  
 TEST DATES: 02/03/2017-19/09/2017

### NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

### REMARKS

- Data from certification report PWA-9850
- 3 engines tested
- TALON-X, Block-C\* combustor
- Certification in accordance with ICAO Annex 16 Vol. II. 3rd Edition, Amendment 7, Part III, Chapter 2.

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)